

PATENT COOPERATION TREATY

To:

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 8 June 2005 (08.06.2005)		
Applicant's or agent's file reference OPP031614KR	FOR FURTHER ACTION See paragraph 2 below	
International application No. PCT/KR 2005/000380	International filing date (day/month/year) 7 February 2005 (07.02.2005)	Priority Date (day/month/year) 9 February 2004 (09.02.2004)
International Patent Classification (IPC) or both national classification and IPC H01L 29/786, H01L 27/12, G02F 1/1368		
Applicant SAMSUNG ELECTRONICS CO., LTD.		

1. This opinion contains indications relating to the following items:

- ☒ Cont. No. I Basis of the opinion
- ☒ Cont. No. II Priority
- ☐ Cont. No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Cont. No. IV Lack of unity of invention
- ☒ Cont. No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Cont. No. VI Certain documents cited
- ☐ Cont. No. VII Certain defects in the international application
- ☒ Cont. No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ AT Austrian Patent Office Dresdner Straße 87, A-1200 Vienna Facsimile No. +43 / 1 / 534 24 / 535	Authorized officer HARASEK S. Telephone No. +43 / 1 / 534 24 / 574
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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No. PCT/KR 2005/000380

Continuation No. I**Basis of the opinion**

1AP20 Rec'd PCT/PTO 02 MAY 2006

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed.

Continuation No. II**Priority**

1. The following document has not yet been furnished: copy of the earlier application whose priority has been claimed (Rules 43bis.1 and 66.7(a)).

translation of the earlier application whose priority has been claimed (Rules 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

Continuation No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-6	YES
	Claims 7-9	NO
Inventive step (IS)	Claims 1-6	YES
	Claims 7-9	NO
Industrial applicability (IA)	Claims 1-9	YES
	Claims ----	NO

2. Citations and explanations:

The following documents have been cited in the Search Report:

D1: DE 19712233 A1

D2: US 6211928 B1

D3: REESE C. et al. Organic thin film transistors. Materials Today. September 2004, Vol. 7, No. 9, pages 20-27

Documents D1 and D2 describe liquid crystal displays, while document D3 is a review on organic thin film transistors.

D1 clearly shows a bottom-gate TFT comprising a transparent glass substrate (reference sign 111 in D1), a gate electrode (113) as well as a gate insulating layer (157), a semiconductor layer (119, 121) and a passivation layer (159) formed on it. It is mentioned that the gate insulating layer may be made of Parylene. In an alternative embodiment described in D1 also a top-gate architecture of the TFT is shown. Also the presence of a pixel-electrode on top of the passivation connected to the drain electrode through a contact hole is disclosed in D1.

Therefore, claims 7-9 cannot be considered novel in view of D1. In addition, the features of claim 7 of the present application are also shown in D2.

Finally, document D3 describes thin film transistor arrays according to claims 1-3 and 5 of the present application. Especially, the bottom-contact structure of the bottom-gate TFT of claim 1 is shown in fig. 5 of D3. In the same way the utilisation of a plastic substrate and an organic semiconductor layer are mentioned and a manufacturing method for the TFT showing the features of claim 5 is disclosed.

Document D3 has been published after the claimed priority date but prior to the filing date of the present international application. However, this opinion is - as stated above - established under the assumption that the relevant date is the priority date and therefore claims 1-6 are considered novel and involving an inventive step. Industrial applicability is given.

Continuation No. VI:

Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
REESE C. et al. Organic thin film transistors. Materials Today. September 2004, Vol. 7, No. 9, pages 20-27			

Continuation No. VIII:

Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 6 should be dependent on claim 5 and not claim 1, since solely claim 5 relates to a manufacturing method as claim 6 does.